

## 2005-2006 Season

### Overall Lab Surveillance

#### Total Specimens Collected

- Collected in Week 40: **19**
- Season Total: **19**

#### Newly identified influenza

*Newly identified; Cumulative*

- Influenza A: **0;0**
- Influenza B: **0;0**

#### Newly subtyped influenza

*Newly identified; Cumulative*

- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

### Sentinel Site Lab Surveillance

#### Total Specimens Collected

- Collected in Week 40: **9**
- Season Total: **9**

#### Newly identified influenza

*Newly identified; Cumulative*

- Influenza A: **0;0**
- Influenza B: **0;0**

#### Newly subtyped influenza

*Newly identified; Cumulative*

- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

### Research Lab Surveillance

#### Total Specimens Collected

- Season: **0**
- Influenza A: **0**
- Influenza B: **0**
- Influenza A/H3N2: **0;0**
- Influenza B/HongKong: **0;0**
- Influenza B/Shanghai: **0;0**

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# DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

## Week 40

**2 - 8 October 2005**

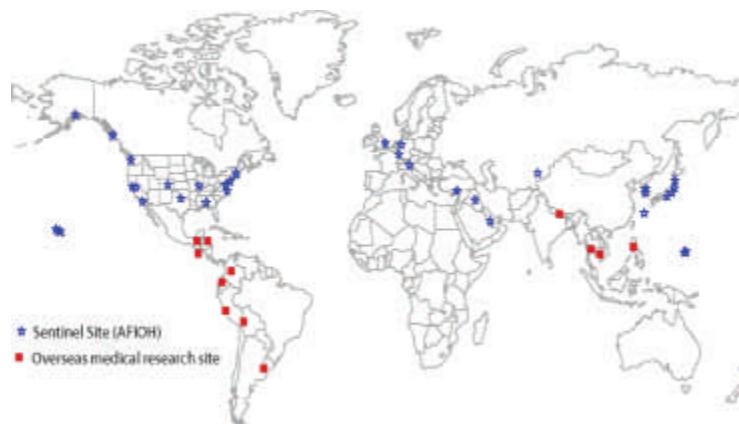
### **DoD-GEIS Influenza Surveillance System Network**

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. It involves a unique network of influenza surveillance efforts from the Air Force Institute for Operational Health (AFIOH), the Naval Health Research Center (NHRC), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2], the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

### **AFIOH Influenza Surveillance Network**

The influenza program at AFIOH includes global influenza surveillance among DoD beneficiaries at 38 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, and two DoD overseas medical research laboratories (i.e., the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Institute Detachment [NAMRID] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia. New to our surveillance efforts this season is the addition of the Joint Task Force (JTF) Bravo, in partnership with the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that will collect specimens from local residents in El Salvador, Guatemala, and Honduras.

### **AFIOH Sentinel Sites and Overseas Research Laboratories 2005-2006 Season**



### **AFIOH Reporting Procedures**

The information in this report describes:

- 1) **Overall Laboratory Surveillance** (i.e., all respiratory specimens submitted to and processed by the AFIOH laboratory);
- 2) **Sentinel Site Laboratory Surveillance** (i.e., respiratory specimens submitted by the sentinel sites using the protocol of selecting 6-10 influenza-like illness [ILI] specimens per week); and
- 3) **Overseas Research Laboratory Surveillance** (i.e., respiratory specimens submitted by two of the DoD overseas medical research laboratories [AFRIMS and NMRC-D] and the JTF Bravo sites).

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating centers.

## Processing Methods

The AFIOH Surveillance Division Laboratory is accredited by the College of American Pathologists (CAP) and is a World Health Organization (WHO) Collaborating Laboratory. It is the central viral laboratory for the DoD Global Influenza Surveillance Program and the main reference laboratory for the Air Force. Thus, the laboratory serves a dual purpose as both a diagnostic laboratory (i.e., for sites ordering respiratory tests on specimens for patient management) and a surveillance laboratory (i.e., for sentinel sites participating in the influenza surveillance program).

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of these isolates undergo molecular sequencing.

## Overall Laboratory Surveillance

Laboratory surveillance describes all specimens submitted to the AFIOH laboratory for respiratory testing (i.e., from sentinel sites, non-sentinel sites, and overseas laboratories).



### Sites submitting specimens for respiratory testing

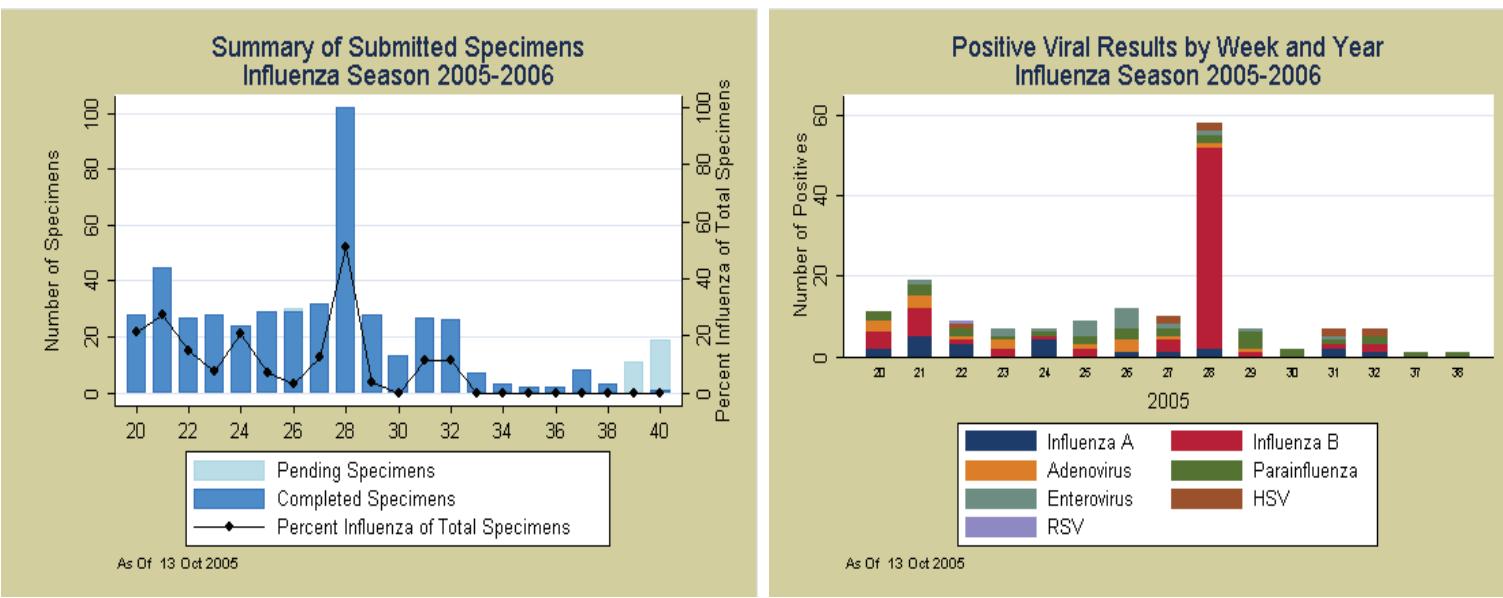
During Week 40, a total of 3 sites submitted specimens for respiratory testing to the AFIOH laboratory. Thirty-three percent ( $n=1$ ) of the submitting sites was a non-sentinel site and 67% ( $n=2$ ) were sentinel sites (please see map to the right).

## Overall Laboratory Results

**Week 40 overview.** One (5%) of the 19 specimens collected during Week 40 was processed and completed as a negative result.

**Summer overview:** On 15 May 2005 AFIOH began gathering data from CHCS. Since then a total of 494 specimens were collected and 94% ( $n=465$ ) have been processed to date. An overwhelming majority (60%) of the specimens processed were negative, while 34% ( $n=167$ ) were positive for a respiratory virus. Of those specimens testing positive, 10% were adenovirus, 13% influenza A, 44% influenza B, 17% parainfluenza, 10% enterovirus, 5% HSV, and 1% RSV.

**Subtyping:** Eighty-four percent ( $n=80$ ) of the influenza isolates were subtyped (23% [ $n=18$ ] were Influenza A/H3N2, 74% [ $n=59$ ] were Influenza B/Hong Kong, and 3% [ $n=3$ ] were Influenza B/Shanghai).



## Sentinel Site Laboratory Surveillance

Sentinel site surveillance describes specimens submitted by the 38 sentinel sites using the protocol of collecting 6-10 specimens each week from patients meeting the ILI case definition (**fever  $\geq 100.5^{\circ}\text{F}$  and cough or sore throat**) and completing the "Influenza Surveillance Questionnaire" (see "Sentinel Site Lab Surveillance, page 4). Two sentinel sites, Tripler Army Medical Center (AMC), located in Hawaii, and Landstuhl Regional Medical Center (RMC), located in Germany, send selected influenza positive specimens to AFIOH to be further characterized. These sites are major medical centers and have established laboratories capable of detecting influenza. Their involvement in the DoD-wide program is valued due to their mission and geographical location.

### Sites submitting specimens for respiratory testing

During Week 40, the AFIOH laboratory received respiratory specimens from **2** sentinel sites (see map).

It is important to note that although 2 sentinel sites submitted specimens, neither met the sentinel site program protocol. One site submitted between 6-10 specimens during Week 40, but did not complete the "Influenza Surveillance Questionnaire" for the specimens.

**Regional Overview.** The specimens collected by sentinel sites in Week 40 were from the East North Central (78%) and East South Central (22%) regions.



**ESSENCE Overview.** AFIOH reviewed ILI activity in the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) and observed ILI activity at all sentinel sites during Week 40. This does not indicate that all patients met the ILI case definition (i.e., fever  $\geq 100^{\circ}\text{F}$  and cough or sore throat); however, an abundance of ILI activity is a good indicator that enough patients met the case definition for inclusion in the program.

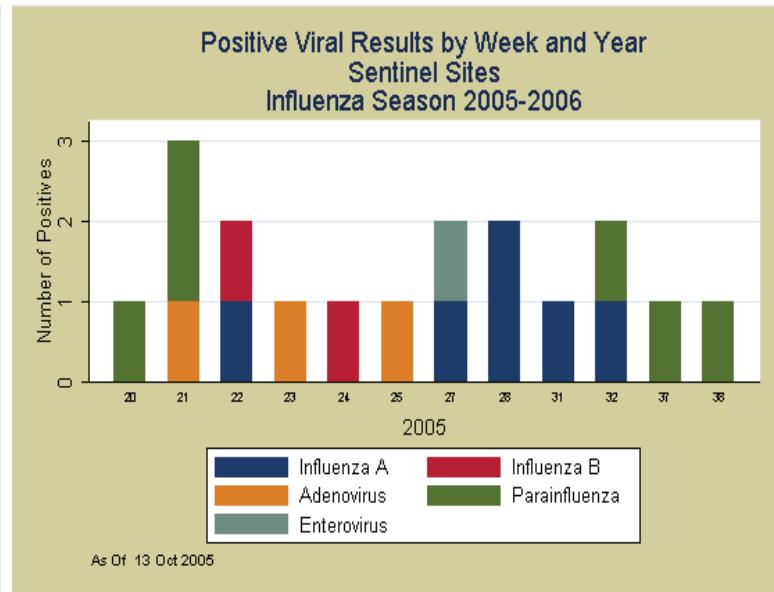
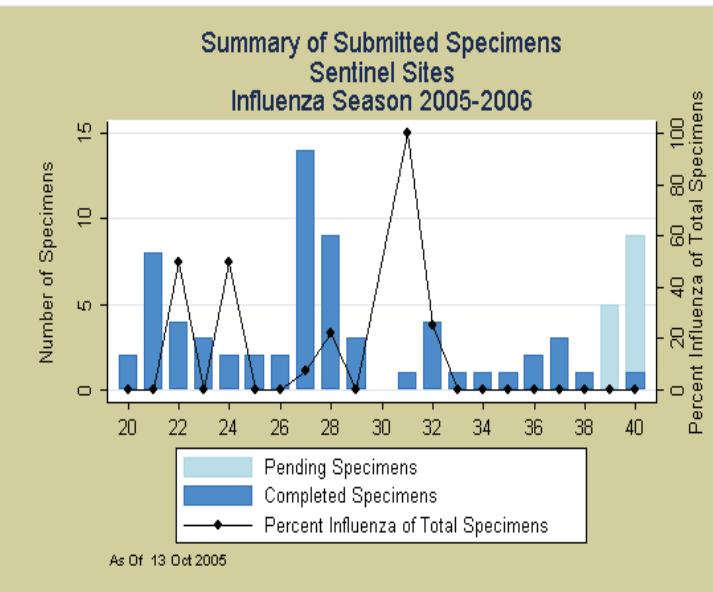
**Actions Taken:** The two submitting sentinel sites were contacted regarding the non-submission of the "Influenza Surveillance Questionnaire". Additionally, AFIOH has begun emphasizing with each MAJCOM Public Health Officer the importance of program participation this season.

## Sentinel Site Laboratory Results

**Week 40 overview.** One of the 9 specimens collected during Week 40 was processed and completed as a negative result.

**Summer overview:** Since 15 May 2005 (AFIOH began gathering data from CHCS), a total of 77 specimens were collected and 83% (n=64) have been processed to date. A majority (60%) of the specimens processed were negative, while 23% (n=18) were positive for a respiratory virus. Of those specimens testing positive, 17% were adenovirus, 33% influenza A, 11% influenza B, 33% parainfluenza, and 6% enterovirus.

**Subtyping:** 100% (n=8) of the influenza isolates were subtyped (75% [n=6] were Influenza A/H3N2, 12% [n=1] were Influenza B/Hong Kong, and 12% [n=1] were Influenza B/Shanghai).



### Influenza Surveillance Questionnaire

The "Influenza Surveillance Questionnaire" is requested from each sentinel site that submits a respiratory specimen to this Program. The questionnaire identifies symptoms, travel history, current family illness, vaccination status, highest temperature/current temperature, hospitalization status, and quarter status.

As of 14 October 2005, there have been no questionnaires submitted.

### Overseas Medical Research Laboratory Surveillance

The overseas medical research laboratory surveillance describes all specimens submitted by one of the DoD overseas medical research laboratories and the JTF Bravo sites. Specimens are batched for shipments and therefore we do not receive specimens on a weekly or monthly basis.

#### Sites submitting specimens for respiratory testing

The AFIOH laboratory did not receive respiratory specimens from any of the DoD medical overseas research sites or JTF Bravo sites.

Since 15 May 2005, respiratory specimens have been collected from local residents from the following locations: Nepal, Peru, and Honduras (see map).

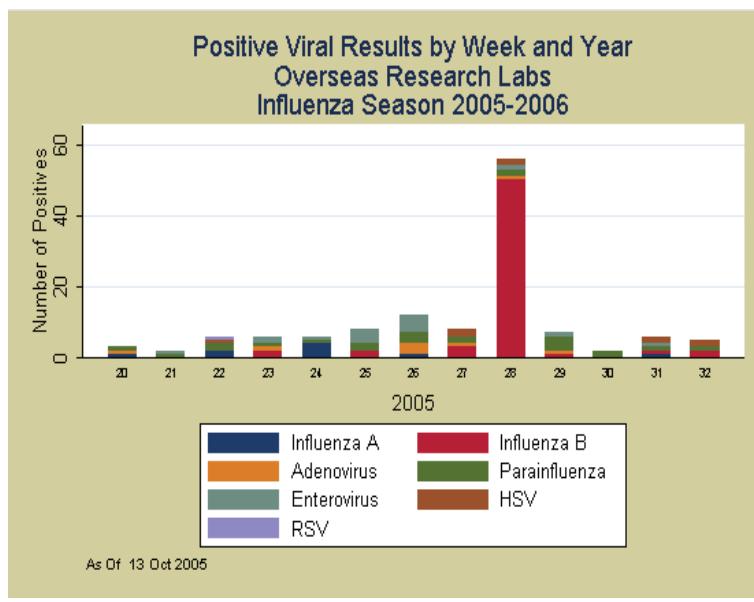
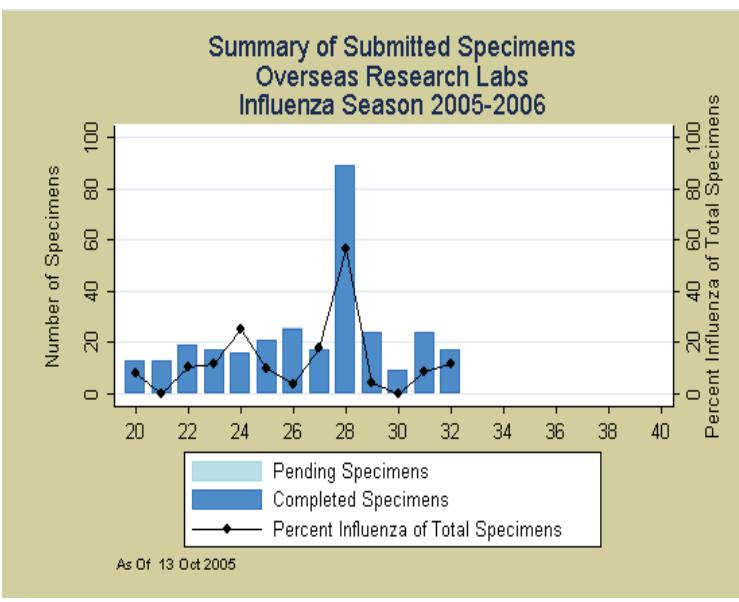


#### Laboratory Results

**Week 40 overview.** As specimens are shipped in batches, we have yet to receive specimens collected during Week 40.

**Summer overview:** Since 15 May 2005 (AFIOH began gathering data from CHCS), a total of 305 specimens were collected and 99% (n=304) have been processed to date. A majority (58%) of the specimens processed are negative, while 42% (n=127) were positive for a respiratory virus. Of those specimens testing positive, 6% were adenovirus, 7% influenza A, 48% influenza B, 18% parainfluenza, 13% enterovirus, 7% HSV, and 1% RSV.

**Subtyping:** All influenza isolates collected from any of these areas are subtyped. Currently, 79% (n=55) have been subtyped. Of those subtyped, 11% (n=6) are Influenza A/H3N2 and 89% (n=49) are Influenza B/Hong Kong.



### *Contributions to National and Global Influenza Surveillance*

Each week, AFIOH electronically reports de-identified program data to CDC using the Public Health Laboratory Information System. At this time, we have not submitted respiratory specimen data to CDC due to only one specimen being processed. AFIOH anticipates submitting respiratory specimen data to CDC for use in WHO's global influenza surveillance and CDC's United States influenza surveillance.

#### *Surveillance findings.*

CDC has not yet released surveillance reporting for this season.

#### **Detailed WHO and/or CDC Influenza Surveillance Information:**

National Influenza Activity (**CDC**): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>

International Influenza Activity (**WHO**): <http://www.who.int/GlobalAtlas/DataQuery/home.asp>

### **SIDR Surveillance**

#### *Hospitalization Surveillance at Air Force Facilities*

The Standard In-Patient Data Registry (SIDR) captures in-patient hospitalization data via CHCS from all DoD military treatment facilities. AFIOH reviews a list of ILI ICD-9 codes captured in the first 4 diagnoses for a hospitalized patient.

**September Surveillance.** At Air Force facilities, there were a total of 48 patients hospitalized with ILI. Ninety-six percent (n=46) had unspecified pneumonia (ICD-9 code 486.0) listed in the first 4 diagnosis categories (25 were in the first diagnosis category). Thirty-five percent (n=17) of the hospitalized patients were from AFIOH Sentinel Sites.

### **Influenza News Updates**

From ProMED:

Preceded by Turkey, Romania is the 26<sup>th</sup> nation to report cases of avian influenza (H5N1) among its bird populations. The European Commission has adopted measures to help prevent the spread of the virus by banning imports of live birds, poultry meat, and other poultry products from these countries.

Hong Kong reported two cases of human infection with H9N2 among two children. Infection was mild and self limiting. The importance of this finding can be explained best by a Seo and Webster (J Virol 2001; 75: 2516-25). Very briefly though, they studied avian influenza viruses in Hong Kong bird markets and demonstrated that cross-reactive cellular immunity produced by H9N2 protected birds from lethal infection with H5N1. However, H5N1 was still shed in the bird stool. The concern is that the presence of H9N2 will create a situation that could help perpetuate the spread of H5N1. If sick birds do not die, they remain alive to spread the virus via their stool and if their sickness is not severe enough to be noticed there will be no indication of a problem.

### **2005-2006 Trivalent Influenza Vaccine Composition**

#### *Northern Hemisphere*

#### *2006 Southern Hemisphere*

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• A/New Caledonia/20/99-like (H1N1)</li> <li>• A/California/7/2004-like (H3N2)</li> <li>• B/Shanghai/361/2002-like</li> </ul> | <ul style="list-style-type: none"> <li>• A/New Caledonia/20/99-like (H1N1)</li> <li>• A/California/7/2004-like (H3N2)*</li> <li>• B/Malaysia/2506/2004</li> </ul> |
|--|---|

\*The currently used vaccine virus is A/New York/55/2004

For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>.

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